Section II Soil and Site Information PAGE 1 of 32

HYDRIC SOIL INTERPRETATIONS HYDRIC SOILS LIST Benson, Eddy, Nelson Counties, North Dakota

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy" (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at east one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

Map symbol and				Hydric soils criteria				
map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
Ab: ABERDEEN LOAM	ABERDEEN COLVIN EXLINE GARDENA	No Yes No No	depression	2B3,3 	YES	NO	YES	
Ae: ABERDEEN-EXLINE LOAMS	ABERDEEN EXLINE COLVIN, SALINE GARDENA	No No Yes No	depression	2B3,3	 YES	 NO	 YES	
Ar: ARVESON SANDY LOAM	ARVESON FOSSUM WYNDMERE HECLA HAMAR SL	Yes Yes No No Yes	depression flat depression	2B3 2B3 2B3	YES YES YES	NO NO NO	NO NO NO	
As: ARVILLA SANDY LOAM	ARVILLA CLAIRE OSAKIS SIOUX	No No No No		 		 	 	
AtA: ARVILLA SANDY LOAM, GRAVELLY SUBSTRATUM, 0 TO 3 PERCENT SLOPES	ARVILLA	No						
0 10 3 FERCENT SLOPES	ARVILLA GR. SUBSTRATUM OSAKIS	No No						
	SIOUX	No						
AtB: ARVILLA SANDY LOAM, GRAVELLY SUBSTRATUM, 3 TO 6 PERCENT SLOPES	ARVILLA, GRAVELLY SUBSTRATUM SIOUX	No No					 	
	ARVILLA SPOTTSWOOD	No No						
AVA: ARVILLA SANDY LOAM, SANDY SUBSTRATUM, 0 TO 3 PERCENT SL OPES	ARVILLA	No						
TO 3 TENCENT DE CLEE	OSAKIS ARVILLA GR. SUBSTRATUM	No No		 				
AvB: ARVILLA SANDY LOAM,	CLAIRE	No No						
SANDY SUBSTRATUM, 3 TO 6 PERCENT SL OPES	CLATRE	No						
	CLAIRE ARVILLA GR. SUBSTRATUM	No No						
	LOHNES SIOUX SPOTTSWOOD	No No No		 		 	 	
AxC: ARVILLA-SIOUX SANDY LOAMS, 6 TO 9 PERCENT SLOPES	ARVILLA	No						
	SIOUX RENSHAW	No No						
	CLAIRE LOHNES SPOTTSWOOD	No No No		 		 	 	

Management of the state of				Н	ydric soils (criteria	
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria
BaA: BARNES LOAM, 0 TO 3	BARNES	No				 	
PERCENT SLOPES		110					
	HEIMDAL	No					
	SVEA	No					
	HAMERLY TONKA	No Yes	depression	2B3,3	YES	NO	YES
	VALLERS	Yes	flat	2B3,3 2B3	YES	NO NO	NO
	WYARD	No					
BaB:							
BARNES LOAM, 3 TO 6 PERCENT SLOPES	BARNES	No					
	HEIMDAL	No					
	SVEA BUSE	No No					
	VALLERS	Yes	flat	2B3	YES	NO	NO
	HAMERLY	No					
	TONKA	Yes	depression	2B3,3	YES	NO	YES
BaC: BARNES LOAM, 6 TO 9	BARNES	No					
PERCENT SLOPES	HAMERLY	No					
	SVEA	No					
	WYARD	No					
	BUSE	No					
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
D1- 3	TONKA	Yes	depression	3,2B3	YES	NO	YES
BbA: BARNES-SVEA LOAMS, 0 TO 3 PERCENT SLOPES	BARNES	No					
10 3 I BROENT BEOLES	SVEA	No					
	HAMERLY	No					
	HEIMDAL	No					
	WYARD	No					
	EMRICK TONKA	No Yes	depression	2B3,3	YES	NO NO	YES
BbB:	IONICA	165	depression	203,3	1155	100	1 1 1 1 1 1 1
BARNES-SVEA LOAMS, 3 TO 6 PERCENT SLOPES	BARNES	No					
	SVEA	No					
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	BUSE HAMERLY	No No					
	TONKA	Yes	depression	2B3,3	YES	NO NO	YES
	VALLERS	Yes	flat	2B3,3 2B3	YES	NO NO	NO
	WYARD	No					
BcB: BARNES-SVEA STONY LOAMS, 3 TO 6 PERCENT	BARNES	No					
SLOPES	CVEN	NT.				 	
	SVEA EMRICK	No No					
	HEIMDAL	No					
	HAMERLY	No					
	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	WYARD	No					
	TONKA	Yes	depression	2B3,3	YES	NO	YES

Mara aranka la ara 2				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria		
BdC: BARNES-SVEA-BUSE LOAMS, 6 TO 9 PERCENT SLOPES	BARNES	No						
BeC:	SVEA BUSE HEIMDAL EMRICK HAMERLY PARNELL TONKA VALLERS	No No No No Ves Yes Yes	depression	2B3,3 2B3,3 2B3	YES YES	 NO NO NO	 YES YES NO	
BARNES-SVEA-BUSE STONY LOAMS, 6 TO 9 PERCENT SLOPES	BARNES	No						
	SVEA BUSE HEIMDAL HAMERLY EMRICK PARNELL TONKA	No No No No Yes Yes	depression	2B3,3 2B3,3 2B3	 YES YES	 NO NO	 YES YES	
Bg: BEARDEN SILT LOAM, SALINE	VALLERS BEARDEN	Yes No			YES	NO 	NO 	
	BEARDEN, NONSALINE GLYNDON,	No No]	
	SALINE ABERDEEN COLVIN, SALINE	No Yes	depression	 2B3	 YES	NO	NO	
Bh: BINFORD SANDY LOAM	GARDENA BINFORD	No No						
BINFORD SANDI LOAM	WALUM VANG TOLNA	No No No	 	 		 	 	
BkA: BINFORD SANDY LOAM, GRAVELLY SUBSTRATUM,	BINFORD	No]	
0 TO 3 PERCENT SLOPES	BINFORD, <40% GR. SUBSTRA.	No						
Dl-D	TOLNA WALUM	No No						
BkB: BINFORD SANDY LOAM, GRAVELLY SUBSTRATUM, 3 TO 6 PERCENT SLOPES	BINFORD	No]]	
	BINFORD, <40% GR. SUBSTRA.	No						
	VANG COE GARDENA	No No No	 	 		 	 	
	TOLNA TONKA	No Yes	depression	2B3,3	YES	NO	YES	

				TT	dmia anil-			
Map symbol and				Hydric soils criteria				
map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria	
BlA: BINFORD SANDY LOAM, SANDY SUBSTRATUM, 0 TO 3 PERCENT SL OPES	BINFORD	No						
10 3 FERCENT SE OFES	BINFORD, >40% GR. SUBSTRA.	No						
	WALUM TOLNA	No No						
BlB: BINFORD SANDY LOAM, SANDY SUBSTRATUM, 3 TO 6 PERCENT SL OPES	BINFORD	No						
10 0 PERCENT SE OPES	BINFORD, >40% GR. SUBSTRA.	No						
	COE GARDENA	No No		 	 	 		
	TOLNA TONKA VANG	No Yes No	depression	2B3,3	YES	NO 	YES	
BmC: Binford-COE SANDY LOAMS, 6 TO 9 PERCENT SLOPES	BINFORD	No						
	COE VANG GARDENA TOLNA TONKA	No No No No Yes	 depression	 2B3,3	 YES	 NO	 YES	
BMD: BINFORD-COE SANDY LOAMS, 9 TO 12 PERCENT SLOPES	BINFORD	No						
	COE VANG GARDENA TONKA TOLNA PARNELL	No No No Yes No Yes	depression depression	2B3,3	 YES YES	 NO NO	 YES YES	
Bn: BORUP SILT LOAM	BORUP DIVIDE GLYNDON BORUP VPD MARYSLAND TOTTEN	Yes No No Yes Yes Yes	depression depression flat flat	2B3 2B3,3 2B3 2B3	YES YES YES YES	NO NO NO NO	NO YES NO NO	
BO: BORUP AND MARYSLAND	BORUP	Yes	depression	2B3,3	YES	NO	YES	
SILT LOAMS, VERY WET	MARYSLAND BORUP, POORLY DRAINED DIVIDE	Yes Yes No	depression depression	2B3,3 2B3	YES YES	NO NO	YES NO	
	GLYNDON MARYSLAND TOTTEN	No Yes Yes	flat	2B3 2B3	YES YES	NO NO	NO NO	

Mon grml-11				н	ydric soils	criteria	
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BpB: BORUP AND VALLERS LOAMS, 3 TO 6 PERCENT	BORUP	Yes	drainageway	2B3	YES	NO	NO
SLOPES	VALLERS	Yes	drainageway	2B3	YES	NO	NO
	COLVIN	Yes	drainageway	2B3	YES	NO	NO
	TOTTEN VALLERS, SALINE	Yes Yes	flat drainageway	2B3 2B3	YES YES	NO NO	NO NO
	GLYNDON	No))
BrB:	MARYSLAND	Yes	flat	2B3	YES	NO	NO
BRANTFORD LOAM, 3 TO 6 PERCENT SLOPES	BRANTFORD	No					
	COE	No					
	VANG GARDENA	No No					
	TOLNA	No				j	j
D - 3	TONKA	Yes	depression	2B3,3	YES	NO	YES
BSA: BRANTFORD LOAM, GRAVELLY SUBSTRATUM, 0 TO 3 PERCENT SLO PES	BRANTFORD	No					
110	BRANTFORD, <40% GR. SUBSTRA.	No					
	KENSAL	No					
	TOLNA	No					
BsB:	COE	No					
BRANTFORD LOAM, GRAVELLY SUBSTRATUM, 3 TO 6 PERCENT SLO PES	BRANTFORD	No					
110	BRANTFORD, <40% GR.	No					
	SUBSTRA.	No					
	GARDENA	No					
	TONKA	Yes	depression	2B3,3	YES	NO 	YES
	TOLNA VANG	No No					
BtA: BRANTFORD LOAM, SANDY SUBSTRATUM, 0 TO 3	BRANTFORD	No					
PERCENT SLOPES	BRANTFORD, >40% GR.	No					
	SUBSTRA. KENSAL TOLNA	No No				 	
BtB: BRANTFORD LOAM, SANDY SUBSTRATUM, 3 TO 6	BRANTFORD	No					
PERCENT SLOPES	VANG BRANTFORD >40% GR.	No No		 			
	SUBSTRA.	No					
	GARDENA	No No					
	TOLNA	No					
	TONKA	Yes	depression	2B3,3	YES	NO	YES

Map symbol and				Ну	dric soils	criteria	
map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
BuC: BRANTFORD-COE LOAMS, 6 TO 9 PERCENT SLOPES	BRANTFORD	No					
l 10 3 TERCENT BEGIES	COE	No					
	VANG GARDENA	No No					
	TOLNA TONKA	No Yes	 depression	 2B3,3	 YES	 NO	 YES
Bv: BRANTFORD-KENSAL LOAMS	DDANWEODD	No					
BRANTFORD-RENSAL LOAMS	BRANTFORD KENSAL VANG TOLNA	No No No No	 	 		 	
BwE:							
BUSE-BARNES LOAMS, 9 TO 30 PERCENT SLOPES	BUSE	No					
	BARNES SVEA	No No					
	HAMERLY	No					
	PARNELL TONKA VALLERS	Yes Yes Yes	depression depression drainageway	3,2B3 3,2B3 2B3	YES YES YES	NO NO NO	YES YES NO
BxD: BUSE-EDGELEY LOAMS, 9 TO 30 PERCENT SLOPES	BUSE	No					
	EDGELEY	No					
	BARNES KLOTEN	No No					
	WALSH	No					
ByE: BUSE AND KLOTEN LOAMS, 6 TO 25 PERCENT SLOPES	BARNES	No					
520125	BUSE	No					
	KLOTEN EDGELEY	No No					
	WALSH	No No					
	CAVOUR	No					
BzD: BUSE, SIOUX, AND ZELL SOILS, 3 TO 30 PERCENT SLOPES	BUSE	No					
TENCENT SHOLES	SIOUX	No					
	ZELL	No					
	BARNES EMRICK	No No					
	HECLA	No No					
	RENSHAW	No					
	GARDENA TONKA	No Yes	depression	2B3,3	YES	NO	YES
Ca: CATHAY LOAM	CATHAY	No					
	HEIMDAL	No					
	FRAM MIRANDA	No No		 			
	VALLERS	Yes	flat	2B3	YES	NO	NO
	LARSON	No					
	TONKA	Yes	depression	2B3,3	YES	NO	YES

More gameland and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
ChA: CATHAY-HEIMDAL LOAMS, 0 TO 3 PERCENT SLOPES	HEIMDAL	No						
o to a thrent phoths	CATHAY VALLERS FRAM	No Yes No	 flat	2B3	YES	NO	NO	
	LARSON TONKA MIRANDA	No Yes No	depression	2B3,3	YES	NO	YES	
ChB:	PARNELL	Yes	depression	2B3,3	YES	NO 	YES	
CATHAY-HEIMDAL LOAMS, 3 TO 6 PERCENT SLOPES	HEIMDAL	No						
	MIRANDA TONKA LARSON PARNELL VALLERS	No Yes No Yes Yes	depression depression flat	2B3,3 2B3,3 2B3	YES YES YES	NO NO NO NO	 YES YES NO	
Cm: CATHAY-LARSON LOAMS	FRAM	No No						
CATHAT BARGON BOARD	LARSON FRAM HEIMDAL TONKA VALLERS MIRANDA	No No No Yes Yes	depression	2B3,3 2B3	 YES YES	 NO NO	 YES NO	
Cn:	PARNELL	Yes	depression	2B3,3	YES	NO	YES	
CAVOUR-CRESBARD LOAMS	CAVOUR CRESBARD VALLERS SVEA HAMERLY PARNELL TONKA	No No Yes No No Yes Yes	flat depression depression	2B3 2B3,3 2B3,3	YES YES YES YES	NO NO NO NO	 NO YES YES	
Co: CAVOUR AND VALLERS STONY CLAY LOAMS	CAVOUR	No]		
	VALLERS LAMOURE CRESBARD HAMERLY LUDDEN MIRANDA	Yes Yes No No Yes No	flood plain flood plain flood plain flood plain	2B3 2B3 2B3	YES YES YES	NO NO NO	NO NO NO	
CpB: CAVOUR CLAY LOAM, SHALY VARIANT, 3 TO 6	CAVOUR	No						
PERCENT SLOPES	EDGELEY KLOTEN WALSH	No No No	 	 		 	 	
CrA: CLAIRE LOAMY COARSE SAND, 0 TO 3 PERCENT	CLAIRE	No						
SLOPES	MADDOCK HAMAR LOHNES SERDEN	No No No No		 		 	 	

Map symbol and				Hydric soils criteria				
map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
CrB: CLAIRE LOAMY COARSE SAND, 3 TO 6 PERCENT SLOPES	CLAIRE	No						
510115	MADDOCK	No						
	SERDEN HAMAR	No No						
	LOHNES	No						
Cs: CLAIRE COARSE SANDY LOAM	CLAIRE	No						
	LOHNES CLAIRE, 3 - 6% SLOPES	No No						
	MADDOCK	No						
Ct:	HAMAR	Yes	depression	2B3	YES	NO	NO	
CLAIRE-LOHNES-HAMAR LOAMY COARSE SANDS	CLAIRE	No						
	LOHNES HAMAR	No No						
	SERDEN	No						
	FOSSUM LS MADDOCK	Yes No	flat	2B2 	YES	NO 	NO 	
	HECLA	No						
	VENLO	Yes	depression	2B2	YES	NO	NO	
Cu:	WYRENE	No						
CLONTARF SANDY LOAM	CLONTARF	No						
	EMBDEN LOHNES	No No						
	OSAKIS	No						
CvB: COE SANDY LOAM, 0 TO 6 PERCENT SLOPES	COE	No						
	BRANTFORD	No						
	BINFORD SIOUX	No No						
CvD: COE SANDY LOAM, 6 TO 25 PERCENT SLOPES	COE	No						
25 PERCENT SHOPES	VANG	No						
	BRANTFORD TONKA	No Yes	depression	 2B3,3	YES	 NO	YES	
	BINFORD	No	depression	ZB3,3	155	NO 		
	GARDENA	No						
Cw:	TOLNA	No						
COLVIN SILTY CLAY LOAM		Yes	flat	2B3	YES	NO	NO	
	BEARDEN MARYSLAND	No Yes	flat	 2B3	YES	NO	NO	
	BORUP VPD	Yes	depression	2B3,3	YES	NO	YES	
Cx:	COLVIN VPD	Yes	depression	2B3,3	YES	NO	YES	
COLVIN SILTY CLAY LOAM, SALINE	COLVIN	Yes	flat	2B3	YES	NO	NO	
	COLVIN, NONSALINE	Yes	flat	2B3	YES	NO	NO	
	BEARDEN,	No						
	SALINE	Yes	flat	2B3	YES	NO	NO	
	MARYSLAND BORUP VPD COLVIN VPD	Yes Yes Yes	depression depression	2B3,3 2B3,3 2B3,3	YES YES YES	NO NO NO	YES YES	

Man gymbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
Cy:								
COLVIN SILTY CLAY LOAM, VERY WET	COLVIN	Yes	depression	2B3,3	YES	NO	YES	
Borni, vBiti WBi	COLVIN, SALINE	Yes	depression	2B3	YES	NO	NO	
	SOUTHAM	Yes	depression	2B3,3	YES	NO	YES	
	BEARDEN MARYSLAND	No Yes	depression	2B3	YES	NO	NO	
Cz: CRESBARD-CAVOUR LOAMS	CRESBARD	No						
CRESDARD CAVOOR LOAMS	CAVOUR	No						
	VALLERS	Yes	flat	2B3	YES	NO	NO	
	HAMERLY	No	depression	2B3,3	YES	NO	YES	
	PARNELL SVEA	Yes No	depression	ZB3,3	YES	NO	YES	
	TONKA	Yes	depression	3,2B3	YES	NO	YES	
DVA: DIVIDE LOAM, 0 TO 3 PERCENT SLOPES	DIVIDE	No						
THROUGH BHOTHS	MARYSLAND	Yes	flat	2B3	YES	NO	NO	
	RENSHAW	No						
	WARSING TOTTEN	No Yes	flat	 2B3	YES	NO	NO	
DvB: DIVIDE LOAM, 3 TO 6	DIVIDE	No						
PERCENT SLOPES	BRANTFORD	No						
	RENSHAW	No						
	TOTTEN	Yes	flat	2B3	YES	NO	NO	
Dw:	MARYSLAND	Yes	flat	2B3	YES	NO	NO	
DIVIDE LOAM, SALINE	DIVIDE	No						
	DIVIDE,	No						
	NONSALINE TOTTEN	Yes	flat	2B3	YES	NO	NO	
	WARSING	No						
	MARYSLAND, SALINE	Yes	flat	2B3	YES	NO	NO	
	VALLERS,	Yes	flat	2B3	YES	NO	NO	
Dx:	SALINE							
DX: DIVIDE LOAM, GRAVELLY SUBSTRATUM	DIVIDE	No						
	MARYSLAND	Yes	flat	2B3	YES	NO	NO	
	WARSING TOTTEN	No Yes	flat	2B3	YES	NO	NO	
	DIVIDE, SALINE	No				NO	NO 	
Dy: DIVIDE LOAM, SANDY SUBSTRATUM	DIVIDE	No						
200011411011	FRAM	No						
	MARYSLAND	Yes	flat	2B3	YES	NO	NO	
	TOTTEN	Yes	flat	2B3	YES	NO NO	NO 	
	GLYNDON KENSAL	No No						
	WARSING	No						

Man grmbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria		
Dz: DIVIDE LOAM, TILL SUBSTRATUM	DIVIDE	No						
SUBSTRATOR	TOTTEN MARYSLAND WARSING FRAM HEIMDAL	Yes Yes No No No	flat flat 	2B3 2B3 	YES YES 	NO NO 	NO NO 	
EaA:	EMRICK	No						
ECKMAN LOAM, 0 TO 3 PERCENT SLOPES	ECKMAN	No						
	GARDENA GLYNDON	No No						
EaB: ECKMAN LOAM, 3 TO 8 PERCENT SLOPES	ECKMAN	No]	
	ZELL GARDENA	No No		 				
Eb:	GLYNDON	No						
EDGELEY LOAM	EDGELEY SVEA	No No						
	EDGELEY VAR.	No No						
EcB: EDGELEY AND CAVOUR LOAMS, 3 TO 6 PERCENT SLOPES	EDGELEY	No						
	CAVOUR KLOTEN	No No						
	WALSH	No						
	CAVOUR VAR. EDGELEY VAR.	No No						
Ed: EDGELEY LOAM, GRAVELLY	EDGELEY	No						
VARIANT	VARIANT EDGELEY EDGELEY VAR.	No No		 				
	/BEDROCK RENSHAW	No						
	BARNES SVEA VAR.	No No						
EeA: EGELAND SANDY LOAM, 0 TO 3 PERCENT SLOPES	EGELAND	No						
10 3 FERCENI SLOFES	EMBDEN	No						
	HECLA MADDOCK	No No						
EeC: EGELAND SANDY LOAM, 6 TO 12 PERCENT SLOPES	EGELAND	No						
10 12 FERCENT SLOFES	MADDOCK	No						
	EMBDEN HECLA	No No						
_	SWENODA	No No						
Eg: EGELAND SANDY LOAM, SANDY SUBSTRATUM	EGELAND	No						
STANDI DODDINATON	CLONTARF	No						
	ARVILLA EMBDEN	No No		 				
	MADDOCK	No						

More grank-1 1				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
EhA: EGELAND FINE SANDY LOAM, TILL SUBSTRATUM, 0 TO 3 PERCEN T SLOPES	EGELAND, LOAMY SUBSTRATUM	No						
121021 1 220122	SWENODA EGELAND EMBDEN, LOAMY SUBSTRATUM	No No No	 	 		 		
	EMRICK HEIMDAL	No No						
EhB: EGELAND FINE SANDY LOAM, TILL SUBSTRATUM, 3 TO 6 PERCEN T SLOPES	EGELAND, LOAMY SUBSTRATUM	No						
	SWENODA EGELAND HEIMDAL	No No No	 	 	 	 	 	
	EMBDEN, LOAMY SUBSTRATUM EMRICK	No No						
EmC: EGELAND-EMBDEN SANDY LOAMS, TILL SUBSTRATUM, 6 TO 9 PER CENT SLOPES	EGELAND	No						
	EMBDEN HAMAR TIFFANY EMRICK ESMOND HEIMDAL SWENODA	No Yes Yes No No No	flat depression 	2B3 2B3,3 	YES YES 	NO NO 	NO YES 	
EnA: EMBDEN SANDY LOAM, 0 TO 3 PERCENT SLOPES	EMBDEN	No						
EoB:	EGELAND CLONTARF HECLA	No No No		 		 	 	
EMBDEN-EGELAND SANDY LOAMS, 3 TO 6 PERCENT SLOPES	EMBDEN	No						
EsA:	EGELAND CLONTARF HECLA MADDOCK SWENODA	No No No No		 		 	 	
EMBDEN, SWENODA, AND HEIMDAL FINE SANDY LOAMS, 0 TO 3 P ERCENT SLOPES	HEIMDAL	No]]	
	SWENODA EMBDEN TIFFANY ESMOND TONKA WYARD	No No Yes No Yes No	depression depression	2B3,3 2B3,3	 YES YES	NO NO	YES YES	
	FRAM WYNDMERE	No No						

1								
Man gimbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
ESB: EMBDEN, SWENODA, AND HEIMDAL FINE SANDY LOAMS, 3 TO 6 P ERCENT SLOPES	SWENODA	No						
	HEIMDAL EMBDEN TIFFANY TONKA ESMOND WYNDMERE FRAM WYARD	No No Yes Yes No No No	depression depression	2B3,3 2B3,3 	 YES YES 	NO NO NO 	 YES YES 	
Et: EMRICK SANDY LOAM	EMRICK SWENODA TIFFANY HEIMDAL FRAM TONKA WYARD	No No Yes No No Yes	depression depression depression	2B3,3 2B3,3 	 yes yes	NO	 YES YES	
Eu: EMRICK LOAM	EMRICK HEIMDAL FRAM TONKA WYARD	No No No Yes No	depression	 2B3,3	 YES	 NO	 YES	
EVD: ESMOND, COE, AND EMBDEN SOILS, 6 TO 25 PERCENT SLOPES	COE	No						
PERCENT SHOPES	EMBDEN ESMOND EMRICK HEIMDAL BINFORD BRANTFORD VANG TONKA	No No No No No No Yes	 depression	 2B3,3	 YES	 NO	 YES	
EW: EXLINE LOAM	EXLINE COLVIN, SALINE	No Yes	flat	2B3	 YES	NO	NO	
Fa: FARGO AND NUTLEY SILTY	ABERDEEN FARGO	No Yes	lake plain	2B3	YES	NO	NO	
CLAY LOAMS	NUTLEY PARNELL PERELLA FARGO, TILL SUBSTRATUM NUTLEY, TILL SUBSTRATUM HEGNE, SALINE	No Yes Yes Yes No	depression depression lake plain 	2B3,3 2B3,3 2B3 	YES YES YES YES	NO NO NO NO	YES YES NO NO	
Fd: FORDVILLE LOAM	FORDVILLE SPOTTSWOOD RENSHAW WARSING	No No No	 	 	 	 	 	

Man gumbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
Fm: FOSSUM SANDY LOAM	FOSSUM ARVESON WYNDMERE HAMAR PD HECLA MADDOCK VENLO	Yes Yes No Yes No No Yes	flat flat flat depression	2B3 2B3 2B3 2B2	YES YES YES YES	NO NO NO NO	NO NO NO NO	
Fo: FOSSUM LOAM	FOSSUM ARVESON VENLO HAMAR	Yes Yes Yes Yes	flat flat depression flat	2B3 2B3 2B2 2B3	YES YES YES YES	NO NO NO NO	NO NO NO NO	
Fp: FOSSUM AND HAMAR SANDY LOAMS	WYNDMERE FOSSUM	No Yes	depression	2B3	YES	NO	NO	
	HAMAR ARVESON VENLO WYNDMERE HAMAR SL, PD	No Yes Yes No Yes	depression depression	2B3 2B2 2B3	YES YES YES	NO NO NO NO	NO NO NO NO	
Fra: FRAM LOAM, 0 TO 3 PERCENT SLOPES	FRAM	No						
FrB:	EMRICK HEIMDAL WYARD TONKA VALLERS	No No No Yes Yes	depression	2B3,3 2B3	 YES YES	 NO NO	 YES NO	
FRAM LOAM, 3 TO 6 PERCENT SLOPES	FRAM	No						
	VALLERS EMRICK HEIMDAL TONKA WYARD	Yes No No Yes No	flat depression	2B3 2B3,3 	YES YES 	NO NO 	NO YES 	
Fs: FRAM LOAM, SALINE	FRAM EMRICK HEIMDAL VALLERS, SALINE TONKA WYARD FRAM, NONSALINE	No No No Yes Yes No	flat depression	2B3 3,2B3	YES	NO NO	 NO YES 	
Fw: FRAM AND WYNDMERE FINE	FRAM	No						
SANDY LOAMS	WYNDMERE EMRICK HEIMDAL VALLERS TIFFANY TONKA WYARD	No No No Yes Yes Yes	flat depression depression	2B3 3,2B3 2B3,3	YES YES YES	NO NO NO	 NO YES YES	
GaA: GARDENA LOAM, 0 TO 3 PERCENT SLOPES	GARDENA	No						
I INCIMI DIOLID	ECKMAN GLYNDON	No No		 				

More grant-1				Ηζ	dric soils	criteria	
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria
GaB: GARDENA LOAM, 3 TO 6 PERCENT SLOPES	GARDENA	No					
CA.	GLYNDON ECKMAN	No No					
Gd: GLYNDON LOAM	GLYNDON BORUP GLYNDON, SALINE	No Yes No	lake plain	2B3 	YES	NO	NO
	LALLIE GARDENA	Yes No	lake plain	2B3 	YES 	NO 	NO
Ge: GLYNDON LOAM, SALINE	GLYNDON BORUP, SALINE LALLIE, SALINE	No Yes Yes	lake plain	2B3 2B3	YES	NO NO	NO NO
	GLYNDON, NONSALINE GARDENA	No No					
Gp: GRAVEL PIT	GRAVEL PIT	No					
Ha: HAMAR LOAMY COARSE SAND	HAMAR	No					
SAND	LOHNES ARVESON WYRENE FOSSUM HAMAR LCOS, PD	No Yes No Yes Yes	flat flat depression	2B3 2B2 2B2	YES YES YES	NO NO NO NO	NO NO NO NO
Hb: HAMAR LOAMY SAND	VENLO HAMAR FOSSUM VENLO WYNDMERE ARVESON HAMAR LS, PD	Yes No Yes Yes No Yes Yes Yes	depression flat depression flat depression	2B2 2B2 2B2 2B2 2B3 2B3	YES YES YES YES YES YES YES	NO NO NO NO NO NO NO NO	NO NO NO NO NO NO NO NO
Hc: HAMAR COARSE SANDY	HECLA HAMAR	No No					
LOAM	FOSSUM LOHNES VENLO HAMAR SL, PD ARVESON WYRENE	Yes No Yes Yes Yes No	flat depression depression flat	2B3 2B2 2B3 2B3	YES YES YES YES	NO NO NO NO	NO NO NO NO
Hd: HAMAR SANDY LOAM	HAMAR FOSSUM VENLO ARVESON HAMAR SL, PD HECLA WYNDMERE	No Yes Yes Yes Yes No No	flat depression flat depression	2B3 2B2 2B3 2B3 	YES YES YES YES	NO NO NO NO NO	NO NO NO NO NO
HeA: HAMERLY LOAM, 0 TO 3 PERCENT SLOPES	HAMERLY	No					
	TONKA SVEA VALLERS BARNES	Yes No Yes No	depression flat	2B3,3 2B3	YES YES 	NO NO 	YES NO

More grands - 7				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
HeB: HAMERLY LOAM, 3 TO 6 PERCENT SLOPES	HAMERLY	No						
	TONKA BARNES	Yes No	depression	2B3,3 	YES	NO 	YES 	
Hf:	SVEA VALLERS	No Yes	flat	2B3	YES	NO	NO	
HAMERLY LOAM, SALINE	HAMERLY BARNES CAVOUR CRESBARD TONKA	No No No No Yes	depression	 3,2B3	 YES	 NO	 YES	
	VALLERS, SALINE SVEA	Yes No	flat	2B3	YES	NO 	NO 	
HgA: HAMERLY-SVEA LOAMS, 0	HAMERLY	No						
TO 3 PERCENT SLOPES	SVEA TONKA	No Yes	depression	 2B3,3	 YES	NO	 YES	
HgB:	BARNES VALLERS	No Yes	flat	2B3	YES	NO	NO	
HAMERLY-SVEA LOAMS, 3 TO 6 PERCENT SLOPES	HAMERLY	No						
	SVEA TONKA BARNES VALLERS	No Yes No Yes	depression flat	2B3,3 2B3	YES YES	NO NO NO	YES NO	
HhA: HECLA LOAMY SAND, 0 TO 3 PERCENT SLOPES	HECLA	No						
	WYNDMERE HAMAR LS, PD MADDOCK CLAIRE LOHNES	No Yes No No No	flat 	2B2 	YES	NO	NO	
HhB: HECLA LOAMY SAND, 3 TO 6 PERCENT SLOPES	HECLA	No]	
0 12102112 020120	WYNDMERE CLAIRE HAMAR LS, PD LOHNES MADDOCK	No No Yes No No	 flat 	 2B2 	 YES 	NO	NO	
HkA: HECLA SANDY LOAM, 0 TO 3 PERCENT SLOPES	HECLA	No						
	WYNDMERE HAMAR SL, PD CLAIRE LOHNES MADDOCK	No Yes No No No	flat 	2B3 	 YES 	NO	NO	
HkB: HECLA SANDY LOAM, 3 TO 6 PERCENT SLOPES	HECLA	No						
O PERCENI SPORES	WYNDMERE CLAIRE MADDOCK HAMAR SL, PD LOHNES	No No No Yes No	 flat	 2B3 	 YES	 NO	 NO	

Mara arrail 7				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria	
H1B: HECLA-DICKEY FINE SANDY LOAMS, 3 TO 6 PERCENT SLOPES	HECLA	No						
	DICKEY HAMAR FSL, PD HEIMDAL EMRICK KRATKA FSL, PD	No Yes No No Yes	flat flat flat	2B3 2B3	YES	NO NO NO	NO NO NO	
Hm:	MADDOCK	No						
HECLA-HAMAR LOAMY	HECLA	No						
SANDS	HAMAR ARVESON FOSSUM LS HAMAR LS, PD MADDOCK WYNDMERE VENLO	No Yes Yes Yes No No Yes	flat flat depression depression	2B3 2B2 2B2 2B2 	YES YES YES YES YES	NO NO NO NO 	NO NO NO NO NO	
HnA: HECLA-MADDOCK LOAMY SANDS, 0 TO 3 PERCENT SLOPES	HECLA	No						
SHOTES	MADDOCK HAMAR LS, PD CLAIRE LOHNES BLOWN-OUT LAND	No Yes No No No	flat 	2B2	YES	NO	NO	
HnB: HECLA-MADDOCK LOAMY SANDS, 3 TO 6 PERCENT SLOPES	HECLA	No]	
	MADDOCK HAMAR LS, PD CLAIRE BLOWN-OUT LAND	No Yes No No	flat	2B2 	YES	NO	NO 	
	LOHNES	No						
HoA: HEIMDAL SANDY LOAM, 0 TO 3 PERCENT SLOPES	HEIMDAL	No						
10 3 1 Excelled Diol Ed	SWENODA KRATKA EMRICK TIFFANY TONKA WYARD	No Yes No Yes Yes No	flat depression depression	2B3 2B3,3 3,2B3	YES YES YES	NO NO NO NO	 NO YES YES	
HoB: HEIMDAL SANDY LOAM, 3 TO 6 PERCENT SLOPES	HEIMDAL	No						
10 0 PERCENT SLOPES	EMRICK FRAM KRATKA TIFFANY TONKA WYARD	No No Yes Yes Yes No	flat depression depression	2B3 3,2B3 3,2B3	YES YES YES	NO NO NO	 NO YES YES	

Man gumbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria		
HoC: HEIMDAL SANDY LOAM, 6 TO 9 PERCENT SLOPES	HEIMDAL	No						
10 9 TERCENT SHOTES	SWENODA EMRICK TIFFANY EGELAND	No No Yes No	depression	 2B3,3 	 YES	 NO 	 YES	
IIn A	ESMOND TONKA	No Yes	depression	3,2B3	YES	NO	YES	
HpA: HEIMDAL LOAM, 0 TO 3 PERCENT SLOPES	HEIMDAL	No						
22102112 020120	EMRICK TONKA FRAM WYARD	No Yes No No	depression	3,2B3 	YES	NO	YES 	
HpB: HEIMDAL LOAM, 3 TO 6 PERCENT SLOPES	HEIMDAL	No						
IERCENI SHOIES	ESMOND PARNELL EMRICK TONKA WYARD FRAM	No Yes No Yes No No	depression depression	2B3,3 3,2B3 	YES YES	NO NO	 YES YES 	
HpC: HEIMDAL LOAM, 6 TO 9 PERCENT SLOPES	HEIMDAL	No						
	EMRICK ESMOND PARNELL TIFFANY TONKA	No No Yes Yes Yes	depression depression depression	2B3,3 2B3,3 2B3,3	 YES YES YES	NO NO NO	 YES YES YES	
HrD: HEIMDAL-EMBDEN FINE SANDY LOAMS, 9 TO 15 PERCENT SLOPES	HEIMDAL	No						
	EMBDEN ESMOND TIFFANY TONKA KRATKA WYARD FRAM	No No Yes Yes Yes No	depression depression flat	2B3,3 2B3,3 2B3	YES YES YES	NO NO NO NO	YES YES NO	
HrE: HEIMDAL-EMBDEN FINE SANDY LOAMS, 15 TO 25	HEIMDAL	No						
PERCENT SLOPE S	EMBDEN EMRICK ESMOND TONKA WYARD KRATKA TIFFANY	No No No Yes No Yes Yes	depression flat depression	2B3,3 2B3,3 2B3,3	 YES YES YES	 NO NO NO	 YES NO YES	
HsA: HEIMDAL-EMRICK LOAMS, 0 TO 3 PERCENT SLOPES	HEIMDAL	No]		
O TO S LENCENT SHOPES	EMRICK TONKA WYARD FRAM VALLERS	No Yes No No Yes	depression flat	2B3,3 2B3	 YES YES	NO NO NO	YES NO	

Map symbol and				Н	dric soils	criteria	
map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria
HsB: HEIMDAL-EMRICK LOAMS, 3 TO 6 PERCENT SLOPES	HEIMDAL	No					
	EMRICK FRAM PARNELL TONKA VALLERS	No No Yes Yes Yes	depression depression	2B3,3 2B3,3 2B3	 YES YES YES	 NO NO NO	 YES YES NO
III-G	WYARD ESMOND	No No					
Htc: HEIMDAL-EMRICK-ESMOND LOAMS, 3 TO 9 PERCENT SLOPES	HEIMDAL	No					
	EMRICK ESMOND VALLERS	No No Yes	 flat	 2B3	 YES	 NO	 NO
	FRAM WYARD PARNELL	No No Yes	depression	2B3,3	YES	 NO	 YES
HtD: HEIMDAL-EMRICK-ESMOND LOAMS, 9 TO 15 PERCENT SLOPES	TONKA HEIMDAL	Yes No	depression	2B3,3 	YES	NO	YES
TERCENT SHOLES	EMRICK ESMOND VALLERS	No No Yes	 flat	 2B3	 YES	 NO	 NO
	FRAM PARNELL WYARD	No Yes No	depression	2B3,3	YES	NO NO	YES
HtE:	TONKA	Yes	depression	2B3,3	YES	NO	YES
HEIMDAL-EMRICK-ESMOND LOAMS, 15 TO 25 PERCENT SLOPES	HEIMDAL	No					
	ESMOND EMRICK FRAM PARNELL	No No No Yes	depression	 2B3,3	 YES	 NO	 YES
	VALLERS WYARD TONKA	Yes No Yes	flat depression	2B3 2B3,3	YES YES	NO NO	NO YES
Ke: KENSAL LOAM	KENSAL BRANTFORD TOLNA	No No No		 		 	
kf: KENSAL LOAM, SANDY SUBSTRATUM	KENSAL	No					
SOBSTIMION	KENSAL, GRAVELLY SUBSTRATUM	No]	
KoE:	TOLNA BRANTFORD	No No					
KOE: KLOTEN LOAM, 9 TO 30 PERCENT SLOPES	KLOTEN	No					
	BUSE EDGELEY	No No					

Man gimbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria		
KSE: KLOTEN, SIOUX, AND EDGELEY SOILS, 12 TO 25 PERCENT SLOP ES	KLOTEN	No						
	EDGELEY SIOUX COE	No No No	 	 		 	 	
Kt:	BRANTFORD	No						
KRATKA FINE SANDY LOAM	EMBDEN TIFFANY HECLA SWENODA	Yes No Yes No No	flat depression	2B3 3,2B3 	YES YES 	NO NO 	NO YES 	
	ULEN VENLO	No Yes	depression	2B2	YES	NO	NO	
La: LADELLE SILTY CLAY LOAM	LADELLE	No						
LOAT	LAMOURE LAPRAIRIE CHANNEL	Yes No	channel	2B3 	YES 	NO 	NO 	
Lb: LALLIE SILTY CLAY LOAM	LALLIE BEARDEN	Yes No	lake plain	2B3,3	YES	NO 	YES	
	LALLIE, SALINE	Yes	lake plain	2B3	YES	NO	NO	
	COLVIN MANFRED	Yes Yes	lake plain lake plain	2B3 3,2B3	YES YES	NO NO	NO YES	
Le: LAMOURE SILTY CLAY LOAM	LAMOURE	Yes	flood plain	2B3	YES	NO	NO	
	CHANNEL LAMOURE, SALINE	 Yes	flood plain	2B3	YES	NO	NO	
	LADELLE LUDDEN LALLIE VPD	No Yes Yes	flood plain oxbow	2B3 2B3,3	YES YES	NO NO	NO YES	
Lm: LAMOURE SILTY CLAY LOAM, SALINE	LAMOURE	Yes	flood plain	2B3	YES	NO	NO	
	LADELLE	No						
	CHANNEL LAMOURE, NONSALINE	Yes	flood plain	2B3	YES	NO	NO	
T	RYAN	Yes	drainageway	2B3	YES	NO	NO	
	LA PRAIRIE LAMOURE CHANNEL LADELLE WALSH	No Yes No No	 channel 	2B3 	YES	NO	NO 	
Lp: LA PRAIRIE-LAMOURE COMPLEX	CHANNEL							
COM BEA	LA PRAIRIE LAMOURE LADELLE RAUVILLE LAMOURE, SALINE LUDDEN	No Yes No Yes Yes	channel oxbow flood plain	2B3 4,2B3,3 2B3 2B3	YES YES YES	NO NO	NO NO YES NO	

More granded as 3				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria	
Lr:								
LARSON LOAM	LARSON	No No						
	EMRICK VALLERS	Yes	flat	2B3	YES	NO	NO NO	
	CATHAY	No						
	FRAM	No						
	MIRANDA TONKA	No Yes	depression	 3,2B3	YES	NO	YES	
Ls:	TONKA	165	depression	3,203	1155	INO	1155	
LEMERT SANDY LOAM	LEMERT	No						
	ARVESON	Yes	flat	2B3	YES	NO	NO	
	TOTTEN LETCHER	Yes No	flat	2B3	YES	NO 	NO 	
	BORUP PD	Yes	flat	2B3	YES	NO	NO	
Lt:								
LETCHER SANDY LOAM	LETCHER	No			YES			
	TOTTEN KENSAL	Yes No	flat	2B3	YES	NO 	NO 	
	BORUP	Yes	flat	2B3	YES	NO	NO	
	LEMERT	No]]	
	VALLERS	Yes No	flat	2B3	YES	NO 	NO 	
Lu:	WALUM	INO						
LETCHER SANDY LOAM, TILL SUBSTRATUM	LETCHER	No						
	EMBDEN	No					i	
	FRAM	No						
	BORUP VALLERS	Yes Yes	flat flat	2B3 2B3	YES YES	NO NO	NO NO	
	LEMERT	No						
	TOTTEN	Yes	flat	2B3	YES	NO	NO	
LV: LOHNES LOAMY COARSE	LOHNES	No						
SAND	HECLA	No						
	CLAIRE	No						
	OSAKIS	No						
	HAMAR LS WYRENE	Yes No	flat	2B2	YES	NO NO	NO 	
Lw: LOHNES COARSE SANDY	LOHNES	No						
LOAM	LIDGE 3					Į		
	HECLA CLAIRE	No No						
	OSAKIS	No No						
	HAMAR SL	Yes	flat	2B3	YES	NO	NO	
-	WYRENE	No						
Lx: LUDDEN SILTY CLAY	LUDDEN	Yes	flood plain	2B3	YES	NO 	NO 	
	CHANNEL LAMOURE	Yes	flood plain	2B3	YES	NO	NO	
	WAHPETON	No						
	LUDDEN, SALINE	Yes	flat	2B3	YES	NO	NO	
	RYAN	Yes	drainageway	2B3	YES	NO	NO	

Man gumbol and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria	
Lz:								
LUDDEN-LAMOURE COMPLEX	CHANNEL]]	
	LAMOURE	Yes	channel	2B3	YES	NO	NO	
	LUDDEN	Yes	flood plain	4,2B3	YES	YES	NO	
	LAMOURE,	Yes	flood plain	2B3,4	YES	YES	NO	
	SALINE LUDDEN,	Yes	flood plain	2B3,4	YES	YES	NO	
	SALINE	Voc	a selection of	4 202 2	VEC	MEG	VEC	
	RAUVILLE RYAN	Yes Yes	oxbow drainageway	4,2B3,3 2B3,4	YES YES	YES YES	YES NO	
MaA:	KIAN	res	drainageway	ZDJ,4	1123	1123	110	
MADDOCK LOAMY SAND, 0 TO 3 PERCENT SLOPES	MADDOCK	No						
10 3 TERCENT BEOTES	CLAIRE	No						
	SERDEN	No						
	TOWNER	No						
	LOHNES	No						
	DICKEY	No						
	HECLA	No						
MaB: MADDOCK LOAMY SAND, 3 TO 6 PERCENT SLOPES	MADDOCK	No						
10 0 121102211 220122	DICKEY	No						
	TOWNER	No						
	HECLA	No						
	CLAIRE	No						
	LOHNES	No						
MaC:	SERDEN	No						
MADDOCK LOAMY SAND, 6 TO 9 PERCENT SLOPES	MADDOCK	No						
	DICKEY	No						
	SERDEN	No						
	CLAIRE	No]		
	HAMAR LS	Yes	flat	2B2	YES	NO	NO	
	HEIMDAL	No						
341- 3	KRATKA LS	Yes	flat	2B2	YES	NO	NO	
MbA: MADDOCK SANDY LOAM, 0 TO 3 PERCENT SLOPES	MADDOCK	No						
10 5 TERCENT SHOTES	CLAIRE	No						
	DICKEY	No						
	TOWNER	No						
	LOHNES	No						
	HECLA	No						
MbB:	SERDEN	No						
MADDOCK SANDY LOAM, 3 TO 6 PERCENT SLOPES	MADDOCK	No						
	CLAIRE	No						
	DICKEY	No						
	TOWNER	No						
	HECLA	No						
	SERDEN	No						
MbC:	VENLO	Yes	depression	2B2	YES	NO	NO	
MADDOCK SANDY LOAM, 6 TO 9 PERCENT SLOPES	MADDOCK	No						
	CLAIRE	No						
	DICKEY	No						
	KRATKA	Yes	flat	2B3	YES	NO	NO	
	SERDEN	No]	
	HAMAR	Yes	flat	2B3	YES	NO	NO	

Map symbol and				Нус	dric soils	criteria	
map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
MdB: MADDOCK-DICKEY SANDY LOAMS, 0 TO 6 PERCENT SLOPES	MADDOCK	No					
	DICKEY TOWNER KRATKA HECLA HEIMDAL HAMAR BLOWN-OUT LAND	No No Yes No No Yes	 flat flat	2B3 2B3	YES	NO	NO
MdC: Maddock-Dickey Sandy Loams, 6 To 9 PERCENT SLOPES	MADDOCK	No					
SECTES	DICKEY TOWNER HECLA HEIMDAL KRATKA BLOWN-OUT LAND	No No No Yes No	 flat 	2B3	 YES 	 NO 	 NO
MeD: Maddock-serden Loamy Fine Sands, 9 TO 30 PERCENT SLOPES	HAMAR MADDOCK	No				NO	NO
	SERDEN HECLA HAMAR LFS, PD VENLO BLOWN-OUT LAND	No No Yes Yes No	flat depression	2B2 2B2	YES YES	 NO NO	 NO NO
MfD: MADDOCK-SERDEN-HECLA LOAMY FINE SANDS, 9	HECLA	No					
TO 25 PERCENT SLOPES	MADDOCK SERDEN ESMOND HAMAR LFS, PD BLOWN-OUT LAND	No No No Yes No	 flat	 2B2	 YES 	 NO	 NO
Mg:	HEIMDAL VENLO	No Yes	depression	2B2	 YES	 NO	NO
MADE LAND	MADE LAND LANGHEI BUSE SIOUX	No No No No	 	 	 	 	
Mh: MARSH	MARSH SOUTHAM WATER	Yes Yes Yes	depression depression depression	2B3,3 2B3,3 2B3,3	YES YES YES	NO NO NO	YES YES YES
Mm: MARYSLAND LOAM	MARYSLAND BORUP DIVIDE TOTTEN	Yes Yes No Yes	flat flat flat	2B3 2B3 2B3	YES YES YES	NO NO NO	NO NO NO

All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Man gimbal and				НУ	dric soils	criteria	
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria
Mn: MARYSLAND AND ARVESON LOAMS	ARVESON	Yes	flat	2B3	YES	NO	NO
	MARYSLAND BORUP DIVIDE LETCHER STIRUM TOTTEN WYNDMERE	Yes Yes No No Yes Yes	flat flat flat flat	2B3 2B3 2B3 2B3	YES YES YES YES YES	NO NO NO NO	NO NO NO NO
MwC: MINNEWAUKAN LOAMY FINE SAND, 6 TO 9 PERCENT SLOPES	MINNEWAUKAN	Yes	beach	2B2	YES	NO	NO
	COE LALLIE SIOUX ARVESON ARVESON SALINE BUSE	No Yes No Yes Yes	flat flat flat	3,2B3 2B3 2B3	YES YES YES	NO NO NO	YES NO NO
Mx: MIRANDA-CAVOUR CLAY	(MAUVAIS) MIRANDA	No					
LOAMS	CAVOUR PARNELL HAMERLY TONKA VALLERS	No Yes No Yes Yes	depression depression flat	2B3,3 3,2B3 2B3	YES YES YES	NO NO NO	YES YES NO
Os: OSAKIS SANDY LOAM	OSAKIS ARVILLA CLONTARF LOHNES	No No No No	 	 	 	 	
Ot: OSAKIS SANDY LOAM, GRAVELLY SUBSTRATUM	DIVIDE	No No					
GRAVELLI SUBSIKATUM	CLONTARF OSAKIS ARVILLA LOHNES DIVIDE	No No No No No		 	 	 	
Ou: OSAKIS SANDY LOAM, TILL SUBSTRATUM	OSAKIS	No					
	LOHNES CLONTARF DIVIDE FRAM	No No No No	 	 	 	 	
OV: OVERLY SILTY CLAY LOAM	OVERLY BEARDEN WALSH VANG	No No No No	 	 	===	 	
Pa: PARNELL SILTY CLAY LOAM	PARNELL	Yes	depression	2B3,3	YES	NO	YES
	FRAM HAMERLY VALLERS SOUTHAM TONKA	No No Yes Yes Yes	flat depression depression	2B3 3,2B3 3,2B3	 YES YES YES	NO NO NO	 NO YES YES

USDA-NRCS-North Dakota June 2003 Technical Guide Notice ND-41

				НУ	dric soils	criteria	
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	
Pe:	DEAG	37		2 1	NO	NO	VEC
PEAT	PEAT FRESHWATER MARSH	Yes Yes	fen depression	3,1 3,2B3	NO YES	NO NO	YES YES
Pr: PERELLA SILTY CLAY LOAM	PERELLA	Yes	depression	2B3,3	YES	NO	YES
LOAM	BEARDEN COLVIN TIFFANY	No Yes Yes	flat depression	2B3 2B3,3	YES	NO NO	NO YES
Ra: RAUVILLE SILTY CLAY	RAUVILLE	Yes	oxbow	4,2B3	YES	YES	NO
LOAM	CHANNEL LAMOURE	 Yes	flood plain	 4,2B3	YES	 YES	 NO
ReA:	LUDDEN	Yes	flood plain	2B3,4	YES	YES	NO
RENSHAW LOAM, 0 TO 3 PERCENT SLOPES	RENSHAW	No					
	SIOUX FORDVILLE WARSING	No No No		 			
ReB: RENSHAW LOAM, 3 TO 6 PERCENT SLOPES	RENSHAW	No					
	FORDVILLE DIVIDE	No No	 				
	SIOUX WARSING	No No					
Rn: RENSHAW LOAM, GRAVELLY SUBSTRATUM	RENSHAW	No					
	SIOUX	No					
	WARSING RENSHAW (less than 40%	No No					
Rs:	gravel) FORDVILLE	No					
RENSHAW LOAM, SANDY SUBSTRATUM	RENSHAW	No					
	FORDVILLE RENSHAW, GR. SUBSTRATUM	No No		 			
	SIOUX WARSING	No No					
Rt: RENSHAW LOAM, TILL SUBSTRATUM	RENSHAW	No					
	DIVIDE WARSING	No No					
	FORDVILLE HEIMDAL	No No					
Ry: RYAN SILTY CLAY LOAM	RYAN LAMOURE	Yes Yes	drainageway flood plain	2B3 2B3	YES YES	NO NO	NO NO
	CHANNEL RAUVILLE LUDDEN	Yes Yes	oxbow flood plain	2B3,3 2B3	YES YES	NO NO	YES NO

Man gumbal and				Hydric soils criteria			
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria
Rz: RYAN AND LAMOURE SILTY CLAY LOAMS	RYAN	Yes	flood plain	2B3	YES	NO	NO
	LAMOURE LAMOURE,	Yes Yes	flood plain flood plain	2B3 2B3	YES YES	NO NO	NO NO
	SALINE RAUVILLE CHANNEL	Yes	oxbow	2B3,3	YES	NO 	YES
	LAPRAIRIE LUDDEN	No Yes	 flood plain	2B3	YES	NO	NO
Se: SERDEN-HAMAR SANDS	SERDEN HAMAR	No No				 	
	CLAIRE	No					
	ARVESON	Yes	flat	2B3	YES	NO	NO
	MADDOCK HECLA	No No					
	VENLO	Yes	depression	2B2	YES	NO	NO
	WYNDMERE	No					
SoB: SIOUX GRAVELLY LOAM, 0 TO 6 PERCENT SLOPES	SIOUX	No					
TO O TENCENT SHOLES	RENSHAW	No					
	FORDVILLE	No					
	ARVILLA	No					
SoE:	CLONTARF	No					
SIOUX GRAVELLY LOAM, 6 TO 25 PERCENT SLOPES	SIOUX	No					
	HEIMDAL	No					
	ARVILLA RENSHAW	No No					
	FORDVILLE	No					
	BUSE	No					
_	CLONTARF	No					
Sp:	CDOMMCMOOD	No					
SPOTTSWOOD LOAM	SPOTTSWOOD GARDENA	No No					
	WARSING	No					
	FORDVILLE	No					
Sr:	RENSHAW	No					
SPOTTSWOOD LOAM, SANDY SUBSTRATUM	SPOTTSWOOD	No					
	FORDVILLE	No					
	GARDENA WARSING	No					
	RENSHAW	No No					
Ss:	TILLINGIII W	110					
STIRUM SANDY LOAM	STIRUM	Yes	flat	2B3	YES	NO	NO
	LEMERT	No	flat	2B3	YES		
	ARVESON LETCHER	Yes No	IIat	ZB3 	YES	NO 	NO
	HECLA	No					
	TOTTEN	Yes	flat	2B3	YES	NO	NO
C+.	WYNDMERE	No					
St: SVEA LOAM	SVEA	No					
PATIT TOTAL	HAMERLY	No					
	BARNES	No				J	j
	TONKA	Yes	depression	2B3,3	YES	NO	YES
	CRESBARD	No	depression	3,2B3	YES	NO NO	YES
	PARNELL WYARD	Yes No	depression	3,2B3 	YES	NO	YES

Map symbol and	Component		Local landform	Hydric soils criteria			
map unit name		Hydric		Hydric criteria code	Meets saturation criteria		Meets ponding criteria
Su: SVEA LOAM, COBBLY VARIANT	SVEA VARIANT	No					
VARIANI	HAMERLY BARNES PARNELL TONKA SPOTTSWOOD WYARD	No No Yes Yes No No	depression depression	2B3,3 2B3,3 	 YES YES	 NO NO 	 YES YES
SvA: SVEA-BARNES LOAMS, 0 TO 3 PERCENT SLOPES	SVEA	No					
	BARNES HAMERLY TONKA EMRICK WYARD HEIMDAL	No No Yes No No No	depression	2B3,3	 YES 	NO	YES
SvB: SVEA-BARNES LOAMS, 3 TO 6 PERCENT SLOPES	SVEA	No					
SwC:	BARNES PARNELL HAMERLY TONKA VALLERS WYARD BUSE	No Yes No Yes Yes No No	depression depression drainageway	2B3,3 2B3,3 2B3	YES YES YES YES	NO NO NO	YES YES NO
SVEA-BUSE-BARNES LOAMS, 6 TO 9 PERCENT SLOPES	SVEA	No					
	BARNES BUSE PARNELL HAMERLY TONKA VALLERS	No No Yes No Yes Yes	depression depression depression drainageway	2B3,3 2B3,3 2B3,3	 YES YES YES	NO NO NO	YES YES YES NO
Sx: SVEA-CRESBARD LOAMS	SVEA CRESBARD HAMERLY PARNELL TONKA VALLERS CAVOUR BARNES	No No No Yes Yes Yes No	depression depression drainageway	2B3,3 2B3,3 2B3	YES YES YES	 NO NO NO	 YES YES NO
Sz: SWENODA-EMBDEN FINE SANDY LOAMS	EMBDEN, LOAMY SUBSTRATUM SWENODA TIFFANY EGELAND HEIMDAL EMRICK EMBDEN KRATKA	No No Yes No No No No Yes	 depression flat	2B3,3 2B3	 YES YES	 NO NO	YES

Component	Hydric	Local landform				
			Hydric criteria code	Meets saturation criteria	Meets flooding criteria	
IFFANY YNDMERE	Yes No	depression	2B3,3	YES 	NO 	YES
OSSUM ENLO RVESON MBDEN	Yes Yes Yes No	flat depression depression	2B3 2B2 2B3	YES YES YES	NO NO NO	NO NO NO
AMAR	Yes	flat	2B3	YES	NO	NO
IFFANY	Yes	depression	2B3,3	YES	NO	YES
ONKA YNDMERE RAM	Yes No No	depression 	2B3,3 	YES 	NO 	YES
RATKA	Yes	flat	2B3	YES	NO	NO
OLNA RANTFORD INFORD	No No No	 			 	
ENSAL ALUM	No No					
ONKA	Yes	depression	2B3,3	YES	NO	YES
AMERLY RAM	No No					
ALLERS ARNELL	Yes Yes	flat depression	2B3 3,2B3	YES YES	NO NO	NO YES
OTTEN YRENE	Yes No	flat	2B3 	YES	NO 	NO
ARYSLAND EMERT OTTEN L	Yes No Yes	flat flat	2B3 2B3	YES YES	NO NO	NO NO
OTTEN L, WET	Yes	drainageway	2B3,3	YES	NO	YES
OTTEN ARYSLAND IVIDE	Yes Yes No	flat flat	2B3 2B3 	YES YES	NO NO 	NO NO
OTTEN L, WET OTTEN SL ARSING	Yes Yes No	drainageway flat 	2B3,3 2B3	YES YES	NO NO	YES NO
OTTEN ORUP VPD	Yes Yes	depression depression	2B3 2B3,3	YES YES	NO NO	NO YES NO
IVIDE	No					 NO
OTTEN	Yes	flat	2B3	YES	NO	NO
OTTEN, WET OTTEN SL	Yes Yes	drainageway flat	3,2B3 2B3	YES YES	NO NO	YES NO
ARYSLAND	Yes	flat	2B3	YES	NO	NO
OWNER	No					
ECLA EIMDAL	No No					
ADDOCK MRICK AMAR	No No Yes	 flat	2B3	 YES	 NO	 NO
	DITEN L, WET DITEN L, WET DITEN SL ARSING OTTEN DRUP VPD ARYSLAND LIVIDE DITEN L DITTEN L DITTEN SL LIVIDE ARYSLAND DWNER ECLA EIMDAL ADDOCK MRICK	TVIDE NO Yes OTTEN L, WET Yes ARSING NO OTTEN Yes ARSING NO OTTEN Yes ARYSLAND Yes OTTEN L Yes OTTEN L Yes OTTEN Yes OTTEN Yes OTTEN Yes OTTEN SL Yes IVIDE NO ARYSLAND Yes OWNER NO OTTEN NO OTTEN NO ARYSLAND Yes OWNER NO OTTEN N	DTTEN L, WET Yes drainageway flat OTTEN Yes depression depression flat OTTEN L Yes flat OTTEN Yes depression depression flat OTTEN Yes flat OTTEN SL Yes flat OTTEN SL Yes flat OTTEN SL Yes flat OWNER No ECLA No ECLA No ECLA No ADDOCK No No MARK Yes flat	No	No	No

Mara areas 3	Component Hy			Hydric soils criteria			
Map symbol and map unit name		Hydric	Local landform	Hydric criteria code	Meets saturation criteria		Meets ponding criteria
TwB: TOWNER FINE SANDY LOAM, 3 TO 6 PERCENT SLOPES	TOWNER	No					
520125	MADDOCK HECLA HEIMDAL KRATKA EMRICK	No No No Yes No	 flat	2B3	 YES	 NO	 NO
Tx: TOWNER-DICKEY FINE SANDY LOAMS	HAMAR TOWNER	Yes No	flat	2B3 	YES	NO 	NO
	DICKEY KRATKA MADDOCK EMRICK HECLA HEIMDAL HAMAR	No Yes No No No No Yes	flat flat flat	2B3 2B3	YES	NO	NO
Va: VALLERS LOAM	VALLERS PARNELL TONKA FRAM HAMERLY	Yes Yes Yes No No	flat depression depression	2B3 3,2B3 2B3,3 	YES YES YES 	NO NO NO 	NO YES YES
Vn: VANG LOAM	VANG BRANTFORD KENSAL TOLNA GARDENA	No No No No		 		 	
Vo: VENLO SANDY LOAM	VENLO ARVESON FOSSUM HAMAR WYRENE WYNDMERE	Yes Yes Yes Yes No	depression depression flat flat	2B2 2B3 2B3 2B3	YES YES YES YES	NO NO NO NO	NO NO NO NO
W: WATER Wa:	WATER	Yes	depression	2B3,3	YES	NO	YES
WAHPETON SILTY CLAY	WAHPETON CHANNEL LAPRAIRIE RYAN LUDDEN	No No Yes Yes	drainageway	 2B3 2B3	 YES YES	 NO NO	 NO NO
WbB: WALSH LOAM, 3 TO 6 PERCENT SLOPES	WALSH	No					
WbC:	LAPRAIRIE EDGELEY VANG SVEA LAMOURE	No No No No Yes	drainageway	 2B3	 YES	 NO	 NO
WALSH LOAM, 6 TO 9 PERCENT SLOPES	WALSH	No					
	VANG BARNES EDGELEY LAMOURE	No No No Yes	 drainageway	 2B3	 YES	 NO	 NO

Man gumbal and				Hydric soils criteria				
Map symbol and map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria		
WcA: WALSH CLAY LOAM, 0 TO	WALSH	No						
3 PERCENT SLOPES								
	VANG EDGELEY	No No						
	SVEA	No						
	LAPRAIRIE	No						
WcB: WALSH CLAY LOAM, 3 TO 6 PERCENT SLOPES	WALSH	No						
O TERCENT SHOTES	EDGELEY	No						
	VANG	No						
	LAPRAIRIE	No						
	SVEA	No						
WcC:	LAMOURE	Yes	drainageway	2B3	YES	NO	NO	
WALSH CLAY LOAM, 6 TO 9 PERCENT SLOPES	WALSH	No						
	EDGELEY	No				i	i	
	BARNES	No						
	VANG	No						
	LAPRAIRIE LAMOURE	No Yes	drainageway	2B3	YES	NO NO	NO NO	
Wd:	LAMOURE	162	drainageway	253	1123	INO	110	
WALUM SANDY LOAM	WALUM	No						
	BINFORD	No						
	TOLNA	No						
We: WALUM SANDY LOAM, GRAVELLY SUBSTRATUM	WALUM	No						
GIGIVEDEL SODSTIGITOR	WALUM, SANDY SUBSTRATUM	No						
	TOLNA	No						
T.J.E.	BINFORD	No						
Wf: WARSING LOAM	WARSING	No						
WARSING LOAM	DIVIDE	No						
	WARSING, SANDY	No						
	SUBSTRATUM RENSHAW	No						
Wg: WARSING LOAM, SANDY	WARSING	No						
SUBSTRATUM	WARSING, >40% GR. SUBSTRA.	No						
	DIVIDE	No						
	RENSHAW	No]		
Wm: WARSING LOAM, TILL SUBSTRATUM	WARSING	No						
SUBSTRATUM	RENSHAW	No						
	EMRICK	No						
	WARSING, GRAVELLY SUBSTRATUM	No						
	DIVIDE	No				j	j	
Wn:	LILLADD	27				ļ		
WYARD LOAM	WYARD	No						
	FRAM HAMERLY	No No						
	SVEA	No						
	TONKA EMRICK	Yes No	depression	2B3,3	YES	NO 	YES	

Map symbol and				Ну	dric soils	criteria	
map unit name	Component	Hydric	Local landform	Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
				code	CIICEIIA	CIICEIIA	CIICEIIA
Wo: WYNDMERE SANDY LOAM	WYNDMERE	No					
	FOSSUM	Yes	flat	2B3	YES	NO	NO
	HAMAR	Yes	flat	2B3	YES	NO	NO
	CLONTARF	No					
	HECLA	No					
	STIRUM	Yes	flat	2B3	YES	NO	NO
T-T	LOHNES	No					
Wp: WYNDMERE SANDY LOAM, TILL SUBSTRATUM	WYNDMERE	No					
TIBE SOBSITUTION	FOSSUM	Yes	flat	2B3	YES	NO	NO
	SWENODA	No					
	KRATKA	Yes	flat	2B3	YES	NO	NO
	EMRICK	No					
	FRAM	No					
	HECLA	No					
Wr:	PAZAD ESMES	Ma					
WYRENE SANDY LOAM	WYRENE ARVESON	No Yes	flat	2B3	YES	NO	NO NO
•	MARYSLAND	Yes	flat	2B3	YES	NO NO	NO
	CLONTARF	No					
	HAMAR	Yes	flat	2B3	YES	NO	NO
	LOHNES	No					
	TOTTEN	Yes	flat	2B3	YES	NO	NO
Ws:							
WYRENE SANDY LOAM, TILL SUBSTRATUM	WYRENE	No					
	MARYSLAND	Yes	flat	2B3	YES	NO	NO
	TOTTEN	Yes	flat	2B3	YES	NO 	NO
	EMRICK FRAM	No No					
•	LOHNES	No					
	VALLERS	Yes	flat	2B3	YES	NO	NO
Wt:	V11222112	100	1144	223		1,0	110
WYRENE-TOTTEN SANDY LOAMS	WYRENE	No					
	TOTTEN	Yes	flat	2B3	YES	NO	NO
	ARVESON	Yes	flat	2B3	YES	NO	NO
	OSAKIS	No					
	HAMAR	Yes	flat	2B3	YES	NO	NO
1	MARYSLAND WYNDMERE	Yes No	flat	2B3	YES	NO 	NO
I	I M TIMDIJEVE	1 110					

All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Man symbol and	Map symbol and map unit name Component Hy			Hydric soils criteria			
		Hydric	Local landform	Hydric criteria code	Meets saturation criteria		

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.

Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

- 1. All Histosols except Folists, or
- 2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:
 - a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or
 - b. poorly drained or very poorly drained and have either:
 - (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in),
 - or for other soils
 - (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or
 - (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
- Soils that are frequently ponded for long duration or very long duration during the growing season, or
- 4. Soils that are frequently flooded for long duration or very long duration during the growing season.